

Remarks

In the Office Action dated September 17, 2003, the Examiner rejected claims 2, 4, 6-10, 15, 21 and 24 under 35 U.S.C. § 112. The Examiner rejected claims 1, 2, 4 and 6-26 under 35 U.S.C. § 103 as being unpatentable over the publication entitled "Geometric Stress Compensation For Enhanced Thermal Stability in Micromechanical Resonators" (Hsu, et al.) in view of either the publication entitled "VHF Free-Free Beam High-Q Micromechanical Resonators" (Wang, et al.) or U.S. Patent No. 6,249,073 (Nguyen, et al.). The Examiner rejected claims 3 and 5 under 35 U.S.C. § 103 as being unpatentable over (Hsu, et al.) in view of the publication entitled "Micromachining Technologies For Miniaturized Communication Devices" (Nguyen).

New claims 27-29 have been added and support therefore can be found in the application as originally filed in paragraph 47.

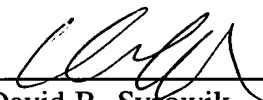
Essentially, the Examiner has rejected claims 1-26 under 35 U.S.C. § 103 relying on a combination of: 1) a stress-compensation based temperature compensation design for a comb-drive (translational) resonator (Hsu, et al.); and 2) a free-free beam resonator design which operates in a vertically flexural mode (Nguyen, et al., or Wang, et al.).

In essence, the proposed combination under 35 U.S.C. § 103 is improper since there is a lack of suggestion to combine a free-free beam design with the temperature-compensation design since they are incompatible. Any such combination would force the skilled artisan to radically alter the design of one or the other or both and consequently destroy such design(s). Such incompatibility is highlighted in each of the independent claims wherein the temperature compensating support structure supports the resonant element at first and second ends above the substrate. However, this claim limitation which appears in each of the independent claims, is contrary to the teachings of the free-free beam design wherein each of the free-free beam patent documents requires that the support structure be attached to the nodal points of the resonator thereby providing a non-intrusive support structure. There is simply

no suggestion or teaching as to how to use the free-free beam design in a context where the resonant element is supported at its ends as required by each of the independent claims of the present application.

Consequently, in view of the above and in the absence of better art, Applicants' Attorney respectfully submits the application is in condition for allowance which allowance is respectfully requested.

Respectfully submitted,
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